



FIG. 1

202

Example

Entry conditions:		
Expected TOS = 5		
Actual TOS = 5		
Source	Value	Target
ST(2)	C	f27
ST(1)	B	f26
ST(0)	A	f25
ST(7)	*	f24
ST(6)	*	f23
ST(5)	*	f22
ST(4)	*	f21
ST(3)	*	f20

204

Code Block $\beta\beta 1$

Source:
L1: FMULP ; //pop
JMP L2

Translated pseudo-code:
L1: Cmp 5, Actual_TOS
NE ? BR Correct
f26 = f26 * f25
Actual_TOS = 6
BR L2

206

After $\beta\beta 1$ execution:

Expected TOS = 6
Actual TOS = 6

Source	Value	Target
ST(1)	C	f27
ST(0)	AB	f26
ST(7)	*	f25
ST(6)	*	f24
ST(5)	*	f23
ST(4)	*	f22
ST(3)	*	f21
ST(2)	*	f20

208

Code Block $\beta\beta 2$

Source:
L2: FADDP ; //pop
FLDE [eax]; //push
JMP L3

Translated pseudo-code:
L2: Cmp 6, Actual_TOS
NE ? BR Correct
f27 = f26 + f27
f27 = f26 + f27
f27 = f26 + f27
BR L3

210

After $\beta\beta 2$ execution:

Expected TOS = 6
Actual TOS = 6

Source	Value	Target
ST(1)	AB+C	f27
ST(0)	X	f26
ST(7)	*	f25
ST(6)	*	f24
ST(5)	*	f23
ST(4)	*	f22
ST(3)	*	f21
ST(2)	*	f20

302

Entry conditions:		
Expected TOS = 5	Actual TOS = 4	
Source	Value	Target
ST(3)	D	f27
ST(2)	C	f26
ST(1)	B	f25
ST(0)	A	f24
ST(7)	*	f23
ST(6)	*	f22
ST(5)	*	f21
ST(4)	*	f20

Code Block 001		
Source:		
L1: FMULP	:	//pop
JMP L2		
Translated pseudo-code:		
L1: Cmp 5, Actual_TOS		
NE ? BR Correct		
f26 = f26 * f25		
Actual_TOS = 6		
BR L2		

Correction pseudo-code		
Delta = Expected_TOS - Actual_TOS		
Rotate_stack(Delta)		
Return (to L1)		

After correction code:		
Expected TOS = 5	Actual TOS = 5	
Source	Value	Target
ST(2)	C	f27
ST(1)	B	f26
ST(0)	A	f25
ST(7)	*	f24
ST(6)	*	f23
ST(5)	*	f22
ST(4)	*	f21
ST(3)	D	f20

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Code Block 001		
Source:		
L1: FMULP	:	//pop
JMP L2		
Translated pseudo-code:		
L1: Cmp 5, Actual_TOS		
NE ? BR Correct		
f26 = f26 * f25		
Actual_TOS = 6		
BR L2		

After 001 execution:		
Expected TOS = 6	Actual TOS = 6	
Source	Value	Target
ST(1)	C	f27
ST(0)	AB	f26
ST(7)	*	f25
ST(6)	*	f24
ST(5)	*	f23
ST(4)	*	f22
ST(3)	*	f21
ST(2)	D	f20

Code Block 002		
Source:		
L2: FADDP	:	//pop
FLDE [eax];		//push
JMP L3		
Translated pseudo-code:		
L2: Cmp 6, Actual_TOS		
NE ? BR Correct		
f27 = f26 + f27		
fldc f26 = {r20}		
BR L3		

After 002 execution:		
Expected TOS = 6	Actual TOS = 6	
Source	Value	Target
ST(1)	AB+C	f27
ST(0)	X	f26
ST(7)	*	f25
ST(6)	*	f24
ST(5)	*	f23
ST(4)	*	f22
ST(3)	*	f21
ST(2)	D	f20

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314

312

Fig. 3

